VZCZCXRO6911
RR RUEHBZ RUEHDU RUEHJO RUEHMR RUEHRN
DE RUEHSA #3726/01 2961230
ZNR UUUUU ZZH
R 231230Z OCT 07
FM AMEMBASSY PRETORIA
TO RUEHC/SECSTATE WASHDC 2370
INFO RUCPDC/DEPT OF COMMERCE WASHDC
RHEBAAA/DEPT OF ENERGY WASHINGTON DC
RUCNSAD/SOUTHERN AF DEVELOPMENT COMMUNITY COLLECTIVE
RUEHBJ/AMEMBASSY BEIJING 0675
RUEHRL/AMEMBASSY BERLIN 0551
RUEHBY/AMEMBASSY CANBERRA 0557
RUEHDO/AMEMBASSY DOHA 0058
RUEHOS/AMCONSUL LAGOS 1189
RUEHLO/AMEMBASSY LONDON 1334
RUEHMO/AMEMBASSY MOSCOW 0682
RUEHOT/AMEMBASSY OTTAWA 0511
RUEHFR/AMEMBASSY PARIS 1193
RUEHTN/AMCONSUL CAPE TOWN 4982
RUEHDU/AMCONSUL DURBAN 9291
RUEHJO/AMCONSUL JOHANNESBURG 7631

UNCLAS SECTION 01 OF 04 PRETORIA 003726

SIPDIS

SIPDIS

STATE PLEASE PASS USAID
STATE PLEASE PASS USGS
DEPT FOR AF/S, EEB/ESC AND CBA
DOE FOR SPERL AND PERSON

E.O. 12958: N/A
TAGS: EPET ENRG EMIN EINV EIND SENV SF
SUBJECT: Sasol Perseveres in Coal-to-Liquid Projects

REF: Pretoria 3113

¶1. SUMMARY: South Africa's Sasol is committed to expanding its coal-to-liquids production both within and outside South Africa. Most automobile drivers in South Africa's interior are burning its gasoline derived from coal. Sasol's Chief Engineer confirmed that Sasol is the world's largest single point greenhouse gas emitter. While highlighting that this marked a critical challenge in expanding production given growing concerns about greenhouse gases, he noted that Sasol lacked viable economic and geological options to mitigate this issue at its current facilities in South Africa. Economic Counselor, Minerals/Energy Officer, EST Officer and FSN Minerals and Energy Specialist visited the Sasol plants at Secunda, east of Johannesburg, South Africa on September 21. End Summary.

Sasol's History - Oil Substitution and Self Sufficiency

¶2. In 1950, the SAG made a strategic decision to build a plant to produce liquid fuels from the country's abundant coal resources and acquired the patented Fischer-Tropsch process from Germany to implement this decision. The first Sasol installation opened in 1955 with a capacity of up to 10,000 barrels per day of crude oil equivalent, plus chemical feedstock. The SAG prompted Sasol to construct a second plant at Secunda in 1976 that would produce 10 times more fuel than the first - about 75,000 barrels per day, given South Africa's reliance on imported oil in the face of oil shocks in the 1970's, in combination with the government's desire to gain self-sufficiency while confronting growing international opposition to apartheid. The same international contingencies spurred the SAG and Sasol to increase the scope and replicate the second plant with an adjacent third one.

¶3. Sasol has long been perceived as a national champion and even at times as a significant target. According to Roper, ANC militants failed in attempts to fire katusha rockets at Sasol II at Secunda on

June 1, 1980. Sasol's Sasolburg chemical complex also came under attack by militants, which caused damage estimated at about $7.2 million, including destruction of a gas tank.

¶4. The first two plants (Sasol I and II) were State-owned, but Sasol went public in 1979 in order to finance the third one. Sasol I became known as the Sasolburg plant and the two new plants as Sasol Secunda. The Secunda complex is the world's largest petrochemical plant built substantially at one time on a single site. It includes two coal-fired electricity plants totaling 600 MW capacity to reduce reliance on the national grid. The original life expectancy for Secunda was 60 years, but with upgrades and refurbishing the facility's life has been extended to 2050. The plant capacity has increased by some 40 percent since commissioning to the current 160,000 barrels per day of crude equivalent. Sasol was privatized in 1979 and currently state-owned enterprises hold 20 percent of the shares. The rest are in the public domain, some 40 percent being held by overseas investors. In 2003, Sasol secured listing on the New York Stock Exchange.

Mining

¶5. Sasol Secunda is serviced by Sasol Mining, which operates four underground mines and one open-cast mine that produce some 45 million tons of coal per year. Sasol also procures 5 million tons from other mines in the area. Of the total coal available, 4 million tons are exported and 40 million tons are blended before being fed into the conversion process. South African coals contain 40 to 45 percent ash and this results in huge adjoining ash dumps for which there is currently little demand.

Processing

¶6. Basic feed to the plant consists of coal, water and air from which steam, power, oxygen, carbon and hydrogen are produced. Steam, oxygen and coal are fed into gasifiers to produce a synthesis gas stream from which value-added products are extracted. These are used to produce a range of products including over two hundred chemicals, sulfur, fertilizers, explosives, waxes, low sulfur diesel, petrol and kerosene of jet engine quality. Sasol producers 80 percent of the world's octene, most of which is sold to Dow Chemical. Currently, Sasol's mix is 70:30 fuel to chemical, but the company aims to make this 50:50 in the future.

Sasol Businesses

¶7. Sasol Synfuels operates the gasifiers and Fischer-Tropsch converters which convert synthesis coal gas into fuels, pipeline gas, and chemical feedstock. Sasol Synfuels sells its synthetic fuels to Sasol Oil for marketing and retailing. Sasol Oil operates the Natref refinery in Sasolburg in which it has a two-thirds share with Total Oil holding the remainder. It blends and markets synfuels from Secunda and refined crude products from Natref, as appropriate, and has established some 400 retail outlets for its petroleum products. Sasol Gas owns a 50 percent share of the Mozambique-South African gas pipeline. The company distributes both natural gas from Mozambique and methane-rich synthetic gas produced at Secunda.

Sasol Looks Abroad

¶8. Sasol Synfuels International (SSI) and its joint-venture partner Sasol-Chevron undertake international gas-to-liquids (GTL) ventures. Sasol's Slurry Phase Distillate technology converts stranded natural gas into liquid fuels. The first operating venture was established in Qatar, where SSI-Chevron has a 49 percent ownership.

Another venture is planned for Nigeria, where the joint venture has 50 percent. Sasol sells its business, not its technology, and therefore wants as much control as possible. There have been teething problems in the start-up of the Qatar Oryx plant which is of a much larger scale than anything Sasol has built in South Africa. (Sasol has not built a GTL plant in SA and its CTL plant produces 160,000 bbl/day vs Qatar's 30,000 bbl/day.) SSI hopes to have the Qatar plant up to capacity within a year. Sasol Petroleum International (SPI) is involved in oil and gas exploration, mainly in Africa, but also internationally, as opportunities present themselves. Sasol's many chemical businesses' main offices and production, research and exploration facilities are located in Africa and the Middle East, the United States, Europe, the Far East, and Australia.

¶9. SSI is far along in its consideration of coal-to-liquid (CTL) plants in India, China, Australia and the U.S., where there is the necessary combination of energy demand, a shortage of oil and gas and an abundance of coal. India has lots of low-quality coal, but it is hard to extract given the way it is deposited in numerous, narrow seams. South African coal is not in narrow seams and is generally of much better quality, hence India's increasing imports of coal from South Africa. Australia has coal in the east, is shutting down oil refineries, and is producing and/or importing off-shore natural gas. There are concerns about the protection of Sasol's intellectual property in China, where IP is hard to protect and there is no word picture for the word "rights". Russia and the EU were excluded. Russia has lots of coal, but also has lots of gas and terrible weather which increases construction and operating costs. The EU has coal, but it is deep and expensive to mine and the EU has access to gas from Russia and North Africa.

¶10. Regarding the U.S., Sasol is considering investing in a CTL

facility in Texas, Montana, Wyoming, Illinois, or North Dakota. Such a project would represent Africa's largest investment in the U.S. The relative attractiveness of the various U.S. sites is determined by the quality of the coal, the means of extraction (open pit or underground mines), the availability of coal (2.5 billion tons minimum with 1.5 billion tons of extractable coal), the availability of water (for use in the CTL conversion process), the distance to market for the electric power, the placement/use the carbon emissions (such as a nearby oil or gas field), and local incentives (such as tax holidays and training subsidies). The placement of carbon emissions is a major obstacle. Montana and North Dakota have less costly open-pit coal mines that are far from markets, Illinois has costly underground mines that are close to markets, and Texas has proximity to oil and gas fields. No decisions have been made regarding the prioritization of these sites.

Threat of a Tax on Windfall Profits

¶11. Sasol has come under fire from the SAG on a number of issues. These include Sasol's tardiness in implementing black economic empowerment, affirmative action and equity labor legislation, and its failure to construct additional synfuel capacity. The SAG also challenged Sasol (and other synthetic fuel produces) on significant (windfall) profits Sasol has made from high petroleum prices. A SAG commission ruled against imposing a special tax that could harm future investment, but the threats spurred Sasol to implement significant black economic empowerment programs and announce capacity expansions.

Sasol's Plans to Expand Domestically

¶12. Synfuel plant capacity is expected to increase by 20 percent (to 192,000 barrels per day) over the next 10 years. Some 95 percent of the expansion is expected to be fueled by natural gas piped in from Mozambique through Sasol's existing pipeline. In addition, a feasibility study is currently underway for a new 80,000

barrels per day CTL plant, in partnership with the SAG, possibly located on the Waterberg coal-fields in the north-west of the country.

Single Largest Point Emitter of GHG

¶13. Sasol Secunda Chief Engineer Ed Koper admitted that Secunda is the world's largest single point emitter of greenhouse gas in the world. He also said Sasol was not the "worst" emitter, noting that state power company Eskom emits three times more greenhouse gas, but these emissions are spread over many locations. Sasol Secunda does not have to comply with SOx or NOx emission standards/regulations, because none exist under South African law. Koper estimated that operating costs would increase by 16-20 percent if companies had to comply with these types of standards. (Comment: The South African government has imposed a ban on new power plants in the Highveld region unless the new plant would not increase greenhouse gas emissions. In other words, Eskom must close a plant to build a new plant. End Comment.)

¶14. The Sasol Secunda plant does not have CO2 mitigation facilities and Koper admitted that it produces far more CO2 than it could possibly sequester in the coal mines surrounding the plant, even if that were a geologically feasible plan. He said, "There aren't enough holes to put all our CO2 into the coal beds." Koper also admitted that the plant's carbon and power efficiency is less than that of a crude oil refinery, a fact he attributed to 1970's factory designs that did not optimize energy use.

HIV - AIDS

¶15. Sasol has implemented a comprehensive HIV/AIDS Response Program (SHARP) aiming to reduce HIV infection rates and extend the quality of life of infected employees. The program emphasizes voluntary counseling and testing. Koper said that 80 percent of employees volunteered for testing. Only 14-15 percent of volunteering employees tested positive, which is significantly less than actuarial estimates of 15-20 percent. Comment: This relatively low infection rate may reflect the fact that Sasol Secunda has an older work force, and/or the fact that the 20 percent of employees that did not test probably have a higher infection rate than those that did.

Comments on Visit

¶16. Chief Engineer Koper, a Dutch national, showed pride in his long association with Sasol, contributing to the building and expanding of the facilities. Koper commented that some Dutch compatriots were critical of his work in South Africa under apartheid, but he pointed at the provision of training and expertise to many South Africans. In addition, he noted that his management responsibility as a young engineer working on Sasol from the ground up gave him much more advanced and deep experience than former school mates. Sasol's status as a national technological champion is documented with the depiction of its original coal gasification facilities on South Africa's 50-Rand note, along with Eskom's nuclear power plant at Koeberg in the Western Cape Province. Unionists still call for Sasol to be "re-nationalized". Sasol has benefited from high oil prices, but it has also made significant improvements in its coal- and gas-to-liquids technologies and will continue to expand domestically and internationally. It will also have to grapple with the challenge of carbon emissions, particularly as it considers significant investment in the U.S.
BOST